ABSTRACT OF THE DISCLOSURE

An echo canceller reduces an echo signal produced when the transmitted signal leaks back into the receiver via a hybrid. The echo canceller estimates the echo signal from the transmitted signal, and then subtracting the estimated echo signal from the received signal. In practice, the echo path channel in a DMT-modem is much longer than the cyclic prefix, and therefore, the received echo signal will be subjected to both ISI (inter-symbol-interference) and ICI (inter-carrier-interference). A traditional echo canceller, designed for a xDSL-modem, uses either a time domain adaptive FIR-filter or a combined echo canceller implemented in both time and frequency domain. A matrix-based adaptive echo canceller is implemented in the frequency domain. Various example embodiments are disclosed.